REMARKS/ARGUMENTS

Claims 1-21 are pending in this application. The Office Action, dated April 27, 2005: rejected claims 18 and 19 under 35 U.S.C. § 112, second paragraph, rejected claims 1, 3-9, and 21 under 35 U.S.C. § 102(e), rejected claims 1-2, 13 and 15-21 under 35 U.S.C. § 102(b) and rejected claim 10 under 35 U.S.C. § 103(a). Claims 11, 12 and 14 are objected to. Claims 1, 14, 15, 18, 20 and 21 have been amended to further clarify the invention. No new subject matter has been added. For at least the following reasons, Applicants respectfully submit that the pending claims as amended are in condition for allowance, and notice to that effect is requested.

Objected claims 11, 12 and 14

The Office Action objected to claims 11, 12 and 14 as being dependent upon a rejected base claim, but noted these claims would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims.

Applicants are grateful for the Examiner's thorough review and have amended the base claim in accordance with the spirit of the Examiner's request. It is thus believed that dependant claims 11, 12 and 14 are in proper condition of allowance, and notice to that effect is requested.

Rejection of claims 18 and 19 under 35 U.S.C. § 112, second paragraph

Claims 18 and 19 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicants are grateful for the Examiner's thorough review and have amended claim 18 in accordance with the spirit of the Examiner's request. It is thus believed that Applicants' claim 18 is in proper condition of allowance, and notice to that effect is requested.

Applicants' Claim 19 depends from and further limits amended claims 18 that Applicants submits is allowable. It is thus believed that dependant claim 19 is also in proper condition of allowance, and notice to that effect is requested.

Rejection of claims 1, 3-9, and 21 under 35 U.S.C. § 102(e)

Claims 1, 3-9, and 21 are rejected under 35 U.S.C. § 102(e) as being anticipated by *Lauffenburger* (U.S. Patent No. 6,657,487). Claims 1 and 21 are amended and are now believed to be in condition for allowance. Claims 3-9 depend from amended claim 1.

Regarding claim 1, Applicants submit that claim 1 as amended is allowable because *Lauffenburger* fails to disclose a feedback circuit that includes a band-gap core circuit as found in Applicants' claim 1. *Lauffenburger* teaches a feedback circuit consisting only of a resistor 72. (*See Lauffenburger* at Fig. 2). Accordingly, *Lauffenburger* fails to meet the structural limitations of Applicants' claim 1. For at least this reason, claim 1 is submitted to be patentable and allowance is solicited.

The Examiner noted Claim 14 as allowable, which disclosed a band-gap core. Claim 1 has been amended to include the limitation of a band-gap core circuit as indicated in allowable claim 14. For at least this reason, claim 1 is submitted to be patentable and allowance is solicited.

Regarding Applicants' claims 3-9, claims 3-9 depend from amended claim 1 that Applicants submit is allowable. Because dependant claims 3-9 contain all of the elements of amended claim 1 as well as additional recited elements that further limit their scope, Applicants believe dependant claims 3-9 are allowable for at least the same reasons.

Regarding Applicants' claim 21, claim 21 has been amended in a in a similar manner to amended claim 1 and is submitted to be patentable for at least the reasons stated above.

Rejection of claims 1-2, 13 and 15-21 under 35 U.S.C. § 102(b)

Claims 1-2, 13 and 15-21 under 35 U.S.C. § 102(b) as being anticipated by *Linder* (U.S. Patent No. 5,581,213). Claims 1, 15, 18, 20 and 21 have been amended and are now believed to be in condition for allowance. Claims 2, 13, 16, 17 and 19 depend from claims 1, 15 and 18.

Regarding claim 1, Applicants' claim 1 recites "a null control logic circuit that is arranged to provide a set of null control signals, where each null control signal is associated with a respective one of the amplifiers **such that the amplifiers are selectively zeroed to minimize the effects of offset in each of the amplifier circuits.**"

The Office Action states that "the reference to *Linder* et al. makes clear that element 10 provides signals to an element in each of the elements gm1-gmn, which will enable or disable it." The Applicants agree with the Examiner that control circuit 10 is arranged to enable or disable the gm stages, however, the control circuit 10 it is not arranged to provide a set of null control signals, where each null control signal is associated with a respective one of the amplifiers such that **the amplifiers are selectively zeroed to minimize the effects of offset in each of the**

amplifier circuits. In fact, *Linder* teaches quite the opposite. *Linder* uses the control circuit 10 to "determine which of the gm stages are activated, and the **activated stages produce current output signals proportional to their respective in put voltages.**" (*See Linder* at col. 4, lines 34-37). As *Linder* teaches a variable gain amplifier rather than a nulled error amplifier, *Linder* teaches only producing output signals proportional to input signals, whether the individual stages are activated or not. Linder does not teach selectively zeroing the individual stages to minimize the effects of offset in each of the amplifier circuits as described in Applicants' amended claim 1.

In addition, the Office Action states that "clearly, which ones of the elements gm1-gmn are on or off will clearly **determine the overall offset** of the circuit, thus meeting the claim language." (emphasis added). The Applicant agrees with the Examiner that which ones of the elements gm1-gmn are on or off will determine the overall offset of the circuit. However, *Linder* does not teach **minimizing or nulling an offset.** *Linder*, on the other hand, teaches turning the individual gm stages on and offer to determine the circuits overall voltage gain, not minimizing an offset. (*See Linder* at col. 4, lines 34-65).

Further, Applicants claim 1 recites that "**each** null control signal is associated with a **respective** one of the amplifiers such that the amplifiers are **selectively zeroed** to minimize the effects of offset in each of the amplifier circuits." *Linder* does not disclose selectively zeroing the individual stages. Although the **overall** offset of the *Linder* amplifier may be determined by which of the individual gm stages is on or off, the **individual** offsets of the gm stages remain constant. Accordingly, *Linder* fails to meet the structural limitations of Applicant's claim 1. For at least this reason, claim 1 is submitted to be patentable and allowance is solicited.

In addition, *Linder* fails to disclose a feedback circuit that includes a band-gap core circuit as found in Applicants' claim 1. *Linder* teaches a feedback circuit consisting only of a resistor Ra. (*See Linder* at Fig. 2). Accordingly, *Linder* fails to meet the structural limitations of Applicants' claim 1. For at least this reason, claim 1 is submitted to be patentable and allowance is solicited.

Linder describes a variable resistor such as illustrated by 6 (Rg) in Fig. 1. Figure 2 of Linder illustrates an example circuit for the Rg resistor of Fig. 1 as noted by label "6." Thus, the operation of 6 in Fig. 2 has the established purpose of operating as a controlled resistor. Given the essential purpose is that of a resistor, the capability of offset adjustment is incompatible with its operation. There is no guidance in Linder as to any operation of offset cancellation or nulling for the overall amplifier that comprises resistors Rf, Rg (6) and amplifier 4. For example, control Vc is arranged to select different effective resistances for resistor Rg. While quire clever, this operation has **nothing** to do with offset adjustment as is taught by applicants claim 1.

Regarding claims 14, 15, 18, 20 and 21, claims 14, 15, 18, 20 and 21 have been amended in a in a similar manner to amended claim 1 and are submitted to be patentable for at least the reasons stated above.

Regarding claims 2, 13, 16, 17 and 19, dependant claims 2, 13, 16, 17 and 19 depend from claims 1, 15 and 18 and should be allowable for at least that reason as well as any additional limitations they recite.

Rejection of claim 10 under 35 U.S.C. § 103(a)

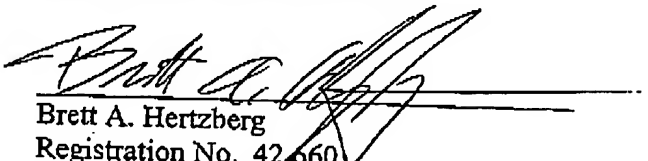
Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Linder* in view of *Bu* (U.S. Patent No. 6,653,900). Applicants respectfully disagree for the reasons stated below.

Applicants' Claim 10 depends from and further limits amended claim 1, which Applicants submit is allowable. Accordingly, applicants believe that all cited references of record fail to meet the structural limitations of claim 10. For at least these reasons and those recited regarding claim 1, dependant claim 10 is submitted to be patentable and a notice of allowance is earnestly solicited.

In view of the foregoing amendments and remarks, all pending claims are believed to be allowable and the application is in condition for allowance. Therefore, a Notice of Allowance is respectfully requested. Should the Examiner have any further issues regarding this application, the Examiner is requested to contact the undersigned attorney for the applicant at the telephone number provided below.

Respectfully submitted,

MERCHANT & GOULD P.C.



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